

AMENDMENTS TO THE CLAIMS

Please amend claim 6, and add new claims 25-28, as follows:

Claim 1 (Previously Presented) An organic electroluminescent device in which an organic thin film layer comprising a single layer or plural layers comprising a phosphorescent light-emitting layer comprising at least a host material and a phosphorescent organic metal complex is interposed between a cathode and an anode, wherein the total of halogen element mass concentrations of bromine, iodine and chlorine which are contained as impurities in the host material of the phosphorescent light-emitting layer is 50 ppm or less.

Claim 2 (Previously Presented) An organic electroluminescent device in which an organic thin film layer comprising a single layer or plural layers comprising a phosphorescent light-emitting layer comprising at least a host material and a phosphorescent organic metal complex is interposed between a cathode and an anode, wherein the total of halogen element mass concentrations of bromine and iodine which are contained as impurities in the host material of the phosphorescent light-emitting layer is 40 ppm or less.

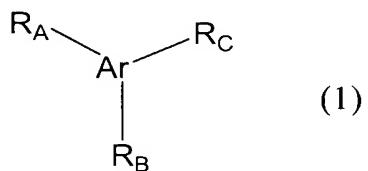
Claim 3 (Previously Presented) An organic electroluminescent device in which an organic thin film layer comprising a single layer or plural layers comprising a phosphorescent light-emitting layer comprising at least a host material and a phosphorescent organic metal complex is interposed between a cathode and an anode, wherein a halogen element mass concentration of bromine which is contained as an impurity in the host material of the phosphorescent light-emitting layer is 30 ppm or less.

Claim 4 (Original) The organic electroluminescent device as described in claim 1, wherein the total of halogen element mass concentrations of bromine, iodine and chlorine is 5 ppm or less.

Claim 5 (Previously Presented) The organic electroluminescent device as described in claim 1, wherein a lower limit of the total of the halogen element mass concentrations described above is 1 ppb.

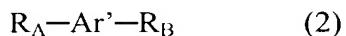
Claim 6 (Currently Amended) The organic electroluminescent device as described in claim 3, wherein the light-emitting layer ~~described above contains~~ comprises at least one ~~selected from~~ phosphorescent organic metal complex complexes and at least one compound selected from the group consisting of an aromatic hydrocarbon compound compounds and an aromatic heterocyclic compound compounds.

Claim 7 (Original) The organic electroluminescent device as described in claim 6, wherein the aromatic hydrocarbon compound and the aromatic heterocyclic compound each described above each have a structure represented by the following Formula (1):



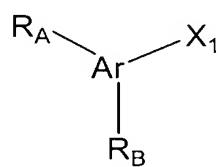
wherein Ar represents a substituted or non-substituted trivalent aromatic hydrocarbon group having 6 to 30 ring carbon atoms or a substituted or non-substituted trivalent aromatic heterocyclic group having 3 to 20 ring carbon atoms; R_A, R_B and R_C each represent independently a substituted or non-substituted aromatic hydrocarbon group having 6 to 30 ring carbon atoms, a substituted or non-substituted aromatic heterocyclic group having 3 to 20 ring carbon atoms or a substituted or non-substituted amino group; R_A, R_B and R_C each may be the same or different, and adjacent ones may be combined with each other.

Claim 8 (Original) The organic electroluminescent device as described in claim 6, wherein the aromatic hydrocarbon compound and the aromatic heterocyclic compound each described above each have a structure represented by the following Formula (2):

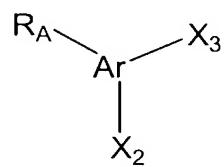


wherein Ar' represents a substituted or non-substituted divalent aromatic hydrocarbon group having 6 to 30 ring carbon atoms or a substituted or non-substituted divalent aromatic heterocyclic group having 3 to 20 ring carbon atoms; R_A and R_B each represent independently a substituted or non-substituted aromatic hydrocarbon group having 6 to 30 ring carbon atoms, a substituted or non-substituted aromatic heterocyclic group having 3 to 20 ring carbon atoms or a substituted or non-substituted amino group, and R_A and R_B each may be the same or different.

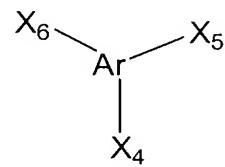
Claim 9 (Previously Presented) The organic electroluminescent device as described in claim 2, wherein halides containing the halogen elements described above have at least one structure represented by the following Formulas (3) to (5):



(3)



(4)



(5)

wherein Ar represents a substituted or non-substituted trivalent aromatic hydrocarbon group having 6 to 30 ring carbon atoms or a substituted or non-substituted trivalent aromatic heterocyclic group having 3 to 20 ring carbon atoms; R_A and R_B each represent independently a substituted or non-substituted aromatic hydrocarbon group having 6 to 30 ring carbon atoms, a substituted or non-substituted aromatic heterocyclic group having 3 to 20 ring carbon atoms or a substituted or non-substituted amino group; R_A, R_B and R_C each may be the same or different;

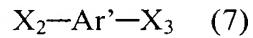
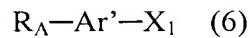
in Formula (3), X₁ represents a halogen atom;

in Formula (4), one of X₂ to X₃ represents a halogen atom, and the remainder represents a halogen atom or a hydrogen atom;

in Formula (5), at least one of X₄ to X₆ represents a halogen atom, and the remainder represents a halogen atom or a hydrogen atom; and

provided that when X₂ to X₆ are hydrogen atoms, Ar is reduced in a valency according to the number of the hydrogen atoms; and when two or more of X₂ to X₃ or X₄ to X₆ are halogen atoms, they may be the same atom.

Claim 10 (Previously Presented) The organic electroluminescent device as described in claim 1, wherein halides containing the halogen elements described above have structures represented by the following Formulas (6) and/or (7):



wherein Ar' represents a substituted or non-substituted divalent aromatic hydrocarbon group having 6 to 30 ring carbon atoms or a substituted or non-substituted divalent aromatic heterocyclic group having 3 to 20 ring carbon atoms; R_A each represents independently a substituted or non-substituted aromatic hydrocarbon group having 6 to 30 ring carbon atoms, a substituted or non-substituted aromatic heterocyclic group having 3 to 20 ring carbon atoms or a substituted or non-substituted amino group;

in Formula (6), X₁ represents a halogen atom;

in Formula (7), one of X₂ to X₃ represents a halogen atom, and the remainder represents a halogen atom or a hydrogen atom;

provided that when X₂ to X₃ are hydrogen atoms, Ar' is reduced in a valency according to the number of the hydrogen atoms; and when two or more of X₂ to X₃ are halogen atoms, they may be the same atom.

Claim 11 (Original) The organic electroluminescent device as described in claim 7, wherein in Formula (1), Ar is benzenetriyl, pyridinetriyl, pyrimidinetriyl or triazinetriyl.

Claim 12 (Original) The organic electroluminescent device as described in claim 8, wherein in Formula (2), Ar' is phenylene, biphenylene, pyridinediyl, pyrimidinediyl or triazinediyl.

Claim 13 (Previously Presented) The organic electroluminescent device as described in claim 7, wherein the phosphorescent light-emitting layer comprises the aromatic hydrocarbon compound having the structure represented by Formula (1).

Claim 14 (Previously Presented) The organic electroluminescent device as described in claim 8, wherein the phosphorescent light-emitting layer comprises the aromatic hydrocarbon compound having the structure represented by Formula (2).

Claim 15 (Previously Presented) The organic electroluminescent device as described in claim 9, wherein the phosphorescent light-emitting layer comprises the halide having at least one structure represented by Formulas (3) to (5).

Claim 16 (Previously Presented) The organic electroluminescent device as described in claim 10, wherein the phosphorescent light-emitting layer comprises the halides having the structures represented by Formulas (6) and/or (7).

Claim 17 (Previously Presented) The organic electroluminescent device as described in claim 1, wherein the halogen element mass concentration described above is identified by inductively coupled plasma-mass spectrometry (ICP-MS analysis) or a coulometric titration method.

Claim 18 (Previously Presented) The organic electroluminescent device as described in claim 1, wherein a halogen element mass concentration of at least one halide contained in a material constituting a hole transporting layer, an electron transporting layer or a hole blocking layer which is adjacent to the light-emitting layer is 20 ppm or less.

Claim 19 (Previously Presented) A material for an organic electroluminescent device in which an organic thin film layer comprising a single layer or plural layers comprising a phosphorescent light-emitting layer comprising at least a host material and a phosphorescent organic metal complex, wherein the halogen element mass concentrations of bromine, iodine and chlorine as impurities are 1 ppb to 50 ppm identified respectively by inductively coupled plasma-mass spectrometry (ICP-MS analysis) or a coulometric titration method.

Claim 20 (Cancelled).

Claim 21 (Original) The material for an organic electroluminescent device as described in claim 19, wherein a halogen element mass concentration of bromine as an impurity is 30 ppm or less.

Claim 22 (Original) A phosphorescent organic metal complex, wherein the total amount of the halogen element mass concentrations of bromine, iodine and chlorine as impurities which are identified by inductively coupled plasma-mass spectrometry (ICP-MS analysis) or a coulometric titration method is 1 ppb to 5 ppm.

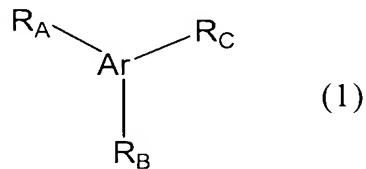
Claim 23 (Previously Presented) A host material for a phosphorescent organic electroluminescent device, the total amount of the halogen element mass concentrations of bromine,

iodine and chlorine as impurities which are identified by inductively coupled plasma-mass spectrometry (ICP-MS analysis) or a coulometric titration method is 1 ppb to 5 ppm.

Claim 24 (Previously Presented) An organic electroluminescent device in which an organic thin film layer comprising a single layer or plural layers comprising a phosphorescent light-emitting layer comprising at least a host material and a phosphorescent organic metal complex is interposed between a cathode and an anode, wherein the light-emitting layer comprises the phosphorescent organic metal complex as described in claim 22 and the host material as described in claim 23.

Claim 25 (New) The organic electroluminescent device as described in claim 3, wherein the light-emitting layer comprises at least one phosphorescent organic metal complex and at least one aromatic heterocyclic compound.

Claim 26 (New) The organic electroluminescent device as described in claim 25, wherein the aromatic heterocyclic compound has a structure represented by the following Formula (1):



wherein Ar represents a substituted or non-substituted trivalent aromatic heterocyclic group having 3 to 20 ring carbon atoms; R_A, R_B and R_C each represent independently a substituted or non-substituted aromatic hydrocarbon group having 6 to 30 ring carbon atoms, a substituted or non-substituted aromatic heterocyclic group having 3 to 20 ring carbon atoms or a substituted or non-substituted amino group; R_A, R_B and R_C each may be the same or different, and adjacent ones may be combined with each other.

Claim 27 (New) The organic electroluminescent device as described in claim 26, wherein the aromatic heterocycle of the substituted or non-substituted trivalent aromatic heterocyclic group represented by Ar is selected from the group consisting of pyrroline, imidazoline, benzimidazoline, pyrazoline, isothiazole, isoxazole, pyridine, pyrazine, pyrimidine, pyridazine, triazine, thiophene, isobenzofuran, thianthrene, indolizine, imidazopyridine, isoindole, 3H-indolyl, indole, tetrahydrocarbazole, 1H-indazole, purine, isoquinoline, quinoline, phthalazine, naphthyridine, quinoxaline, quinazoline, cinnoline, pteridine, carbazole, carboline, phenanthridine, phenothiazine, phenoxazine, benzoisoquinoline, acridine, phenanthroline and phenazine.

Claim 28 (New) The organic electroluminescent device as described in claim 26, wherein Ar represents a substituted or non-substituted trivalent aromatic heterocyclic group selected from the group consisting of pyridinetriyl, pyrimidinetriyl and triazinetriyl.